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In the Claims:

1. (Previously Presented) A method of cleaning a semiconductor device, comprising:

applying a cleaning solution to a surface of the semiconductor device;

introducing an immiscible or partly immiscible additive into the cleaning solution to form heterogeneous nucleation sites in said cleaning solution;

forming an emulsion with the cleaning solution and the additive;

applying sonic waves to the emulsion to induce cavitation, whereby an increased number of bubbles are formed on the surface of the semiconductor device to facilitate particle removal from the surface thereof as a result of said heterogeneous nucleation sites in said cleaning solution.

2. (Original) The method of claim 1, wherein the additive is an organic liquid.

3. (Original) The method of claim 2, wherein the organic liquid is selected from the group consisting of a straight-chained alcohol, a side-chained alcohol, a straight-chained alkane and a side-chained alkane.

4. (Previously Presented) The method of claim 2, wherein the organic liquid forms a hydrophobic phase in the cleaning solution.

5. (Original) The method of claim 1, wherein the sonic waves are megasonic waves.

6. (Previously Presented) The method of claim 5, wherein the megasonic waves are at a frequency such that the additive forms cleaning solution droplets of less than 5 μm in diameter.

7. (Original) The method of claim 1, wherein the sonic waves are between 700 KHz and 15 MHz.

8. (Original) The method of claim 1, wherein the cleaning solution is an SC1 solution or an SC2 solution.

9. (Original) The method of claim 1, wherein the cleaning solution is at a temperature below about 75°C.

10. (Original) The method of claim 1, wherein the additive has a ratio with respect to the cleaning solution of less than about 10% by volume.

11. (Original) The method of claim 1, further comprising adding a surfactant to aid in emulsification.

12. (Currently Amended) The method of claim 11, wherein the surfactant having a known critical micelle concentration [[such]] is added to said cleaning solution at a concentration less than the critical micelle concentration.

13. (Original) The method of claim 12, wherein the concentration of the surfactant is less than 10% of the critical micelle concentration.

14. (Currently Amended) A method of cleaning a semiconductor device, comprising:

applying a cleaning solution to the semiconductor device;

introducing an immiscible [[of]] or partially immiscible phase material into the cleaning solution to form heterogeneous nucleation sites in said cleaning solution; and

applying sonic waves to the cleaning solution and the phase material to form bubbles at said heterogeneous nucleation sites in order to remove particles from the semiconductor device.

15. (Original) The method of claim 14, wherein the sonic waves are megasonic waves.

16. (Original) The method of claim 14, wherein introducing the phase material into the cleaning solution forms an emulsion.

17. (Original) The method of claim 14, further comprising adding a surfactant to the phase material and the cleaning solution.

18. (Previously Presented) The method of claim 17, wherein the surfactant having a known critical micelle concentration is added at a concentration less than the critical micelle concentration, and applying the sonic waves to the cleaning solution, the phase material and the surfactant forms a stable emulsion.

19. (Original) The method of claim 17, wherein the surfactant has a carbon chain of between C6 to C18.

20. (Original) The method of claim 17, wherein the surfactant is cationic.

21. (Original) The method of claim 17, wherein the surfactant is anionic.

22. (Original) The method of claim 14, wherein the cleaning solution is at a temperature less than its boiling temperature.

23. (Previously Presented) The method of claim 1, wherein the sonic waves are applied after said step of introducing an additive.

24. (Previously Presented) The method of claim 14, wherein the additive has a ratio with respect to the cleaning solution of less than about 10% by volume.